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09/067826 BA

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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

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682 U.S. PTO
09/667826
09/21/00



US005811808A

United States Patent [19]

Cannata et al.

[11] Patent Number: **5,811,808**[45] Date of Patent: **Sep. 22, 1998**[54] **INFRARED IMAGING SYSTEM
EMPLOYING ON-FOCAL PLANE
NONUNIFORMITY CORRECTION**[75] Inventors: **Robert F. Cannata**, Santa Barbara,
Calif.; **Jeffrey L. Metschuleit**,
Fisherville, Ky.[73] Assignee: **Amber Engineering, Inc.**, Goleta,
Calif.[21] Appl. No.: **712,891**[22] Filed: **Sep. 12, 1996**[51] Int. Cl.⁶ **G01J 5/20; G01J 5/24**[52] U.S. Cl. **250/332; 250/349; 250/370.08**[58] Field of Search **250/332, 349,
250/338.4, 370.08**[56] **References Cited****U.S. PATENT DOCUMENTS**

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[57] **ABSTRACT**

An infrared imaging system having a focal plane array including an array of detector elements and a readout circuit and including nonuniformity correction circuitry on the focal plane array. The individual detector elements correspond to pixels of an infrared scene to be imaged. Offsets in detection signals from each pixel arising from nonuniformities in the individual detector elements in the array are corrected by storing offset correction values for each detector element and using the stored offset values to control correction circuitry as the respective detector element signals are read out. The detector array and readout circuit are preferably formed as a monolithic or hybrid structure and the offset correction is provided on the focal plane array prior to signal amplification and analog to digital conversion.

35 Claims, 10 Drawing Sheets